



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,768	02/10/2006	Heon-Chan Kang	MAC-11036	5326
23123	7590	11/16/2009	EXAMINER	
SCHMEISER OLSEN & WATTS			KUMAR, KALYANAVENKA K	
18 E UNIVERSITY DRIVE				
SUITE # 101			ART UNIT	PAPER NUMBER
MESA, AZ 85201			3653	
			MAIL DATE	DELIVERY MODE
			11/16/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/567,768	KANG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	KALYANAVENKATESHWARE KUMAR	3653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 28 July 2009.

2a) This action is **FINAL**.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1,5,6,10,11,15,16,20,21,25,26,30 and 31 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1,5,6,10,11,15,16,20,21,25,26,30 and 31 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____ .
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____.	6) <input type="checkbox"/> Other: _____ .



## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 5, 6, 10, 21, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Fiedlschuster et al (USP 6,213,306 B1)** in view of **Olivier (USP 5,373,946), Tse (USP 6,955,265 B2), and Tse (US Pub 2007/0084765 A1)** (*hereinafter Tse '765*).

3. Regarding claims 1 and 5, Fiedlschuster discloses a method for separation of construction waste, in which construction waste crushed to a predetermined size is added to a liquid in a precipitation tank (see Abstract, step d) and separated into components in the tank according to specific gravity, in which the liquid has a reference specific gravity lower than that of a component to be recovered but higher than that of the remaining components, such that only the component to be recovered is separated by precipitation to the bottom of the precipitation tank (see Abstract, step f).

4. Fiedlschuster discloses all the limitations of the claims, but Fiedlschuster does not disclose the liquid is a suspension obtained by diluting a heavy medium, which medium is selected from the group consisting of magnetite powder, ferrosilicon powder, hematite powder, galena powder and a mixture thereof, in water to have a reference specific

Art Unit: 3653

gravity. These features, however, are well known in the gravity liquid separation art. Olivier teaches the use of water and heavy medium, ferrosilicon, for use in gravity liquid separation (Olivier, col. 7, lines 29-49). Moreover, it would be obvious to one with ordinary skill in the art to modify the base reference with these prior art teachings to arrive at the claimed invention. The rationale for this obviousness determination can be found in the use of prior art elements according to their functions is a predictable variation that would yield predictable results, and thus cannot be regarded as a non-obvious modification when the modification is already commonly implemented in the prior art.

5. Further, Fiedlschuster/Olivier discloses all the limitations of the claims, but Fiedlschuster/Olivier does not disclose the steps of: stirring the cylindrical precipitation tank by rotation using a driving unit such that the medium dispersed in the tank is maintained as a stable suspension; introducing the construction waste crushed to a predetermined size into the precipitation tank; recovering the component precipitated to the bottom of the precipitation by lifting up the component by means of a plurality of rotating plates attached around the inner wall of the precipitation tank and allowing the lifted component to fall down into a recovering unit placed at a central portion of the precipitation tank; and gathering the remaining components floating on the suspension at the central portion by pushing with guide plates and discharging the gathered components from the precipitation tank. Tse and Tse '765 teaches the steps of: stirring the cylindrical precipitation tank by rotation using a driving unit such that the medium dispersed in the tank is maintained as a stable suspension (Tse, col. 1, lines 56-63);

introducing the waste crushed to a predetermined size into the precipitation tank (Tse, see Fig. 1, entrance of the system); recovering the component precipitated to the bottom of the precipitation by lifting up the component by means of plurality of rotating plates attached around the inner wall of the precipitation tank and allowing the lifted component to fall down into a recovering unit placed at a central portion of the precipitation tank (Tse, see Fig. 3, elements 31, 32, and 41 and Figs. 9A-E); and gathering the remaining components floating on the suspension at the central portion by pushing with guide plates and discharging the gathered components from the precipitation tank (Tse, see Fig. 1, element 70 and Tse '765 see Fig. 5, element 2 and 22) for the purpose of separating unwanted material from desired material. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Fiedlschuster/Olivier, as taught by Tse, for the purpose of separating unwanted material from desired material. Further, the rationale for this obviousness statement is that the claim would have been obvious because the technique for improving a particular class of devices was part of the ordinary capabilities of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations. In the present case, it would be obvious to teach waste separation using a rotating tank where waste is introduced, stirred, separated, recovered, and gathered from the tank.

6. Regarding claims 6 and 10, Fiedlschuster discloses the component to be recovered is recyclable aggregate, and the remaining components are impurities having a specific gravity lower than that of the aggregate (dependent on what fraction is

desired, that fraction can be separated out by sink or float method that is dependent on the specific gravity of the material, see claim 1 of the reference).

7. Regarding claims 21 and 25, Fiedlschuster discloses each component of the construction waste, which is added to the liquid in the precipitation tank, has been crushed to a size of 10-50 mm (col. 5, lines 49-50).

8. Claims 11, 15, 16, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiedlschuster/Olivier/Tse/Tse '765 in further view of **James et al (US Pub 2003/0213290 A1)**.

9. Regarding claims 11 and 15, Fiedlschuster/Olivier/Tse/Tse '765 discloses all the limitations of the claims, but Fiedlschuster/Olivier/Tse/Tse '765 do not specifically disclose the specific gravity of each component of the construction waste, which is used for determining the reference specific gravity of the liquid, is based on surface-dry density measured in a state where each of the components contained a sufficient amount of water held therein. James teaches that it would have been obvious to use surface-dry density as a method to calculate specific gravity of the desired substance (paragraphs 0006 and 0007). Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Fiedlschuster/Olivier/Tse/Tse '765, as taught by James, as a method to calculate specific gravity of the desired substance.

10. Regarding claims 16 and 20, Fiedlschuster/Olivier/Tse/Tse '765 discloses the reference specific gravity of the liquid is in a range of 2.35-2.5 (Olivier, col. 7, lines 44-46) (see MPEP 2144.05).

Art Unit: 3653

11. Claims 26, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fiedlschuster/Olivier/Tse/Tse '765 in further view of **Smith et al (USP 4,265,737)**.

12. Regarding claims 26, 30, and 31, Fiedlschuster/Olivier/Tse/Tse '765 discloses all the limitations of the claims, but Fiedlschuster/Olivier/Tse/Tse '765 does not disclose a step of stirring the precipitation tank such that the liquid is maintained at a uniform specific gravity or measuring the specific gravity of the liquid in the precipitation tank; and adding the medium into the precipitation tank if the measured specific gravity is lower than the reference specific gravity, or adding water into the tank if the measured specific gravity is higher than the reference specific gravity. Smith teaches a step of stirring the precipitation tank such that the liquid is maintained at a uniform specific gravity (col. 17, lines 1-6, the liquid must be uniform in order to function effectively) or measuring the specific gravity of the liquid in the precipitation tank; and adding the medium into the precipitation tank if the measured specific gravity is lower than the reference specific gravity, or adding water into the tank if the measured specific gravity is higher than the reference specific gravity (col. 26, lines 22-27 and col. 42, lines 10-17, the specific gravity can be altered to a desired ratio through the addition of non-separating material) for the purpose of maintaining or altering the liquid in order to function properly. Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify Fiedlschuster/Olivier/Tse/Tse '765 to be capable of stirring or mixing the separating

liquid, as taught by Smith, for the purpose of maintaining or altering the liquid in order to function properly.

13. Regarding claims 2-4, 7-9, 12-14, 17-19, 22-24, 27-29, and 32-34, the claims have been canceled.

### ***Response to Arguments***

14. Applicant's arguments with respect to claims 1, 11, and 15 have been considered but are moot in view of the new ground(s) of rejection.

#### **15. Rejections under USC 103**

16. Regarding Applicant's argument, "Tse does not include a plurality of rotating plates attached around the inner wall of the precipitation tank," the Examiner disagrees. The Examiner asserts that the plurality of rotating plates as is shown in Figs. 3 and 9A-E elements 31, 32, and 41.

17. Regarding Applicant's argument, "the piercing mechanism of Tse does not disclose the lifting the component precipitated to the bottom of the precipitation and allowing the component to fall down in a recovering unit," and, "Tse does not disclose a recovery unit that a plurality of rotating plates drop components into," the Examiner disagrees. The Examiner asserts that Tse and Tse '765 teach recovery of a material in the center of the precipitation tank (Tse '765; paragraph 0023). The rationale for this obviousness statement is that the claim would have been obvious because the technique for improving a particular class of devices was part of the ordinary capabilities

Art Unit: 3653

of a person of ordinary skill in the art, in view of the teaching of the technique for improvement in other situations.

***Conclusion***

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).
19. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalyan Kumar whose telephone number is 571-272-8102. The examiner can normally be reached on Mon-Fri 7:00AM-3:30PM.
21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on 571-272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.
22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

Art Unit: 3653

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick H. Mackey/  
Supervisory Patent Examiner, Art  
Unit 3653

Kalyan Kumar

Examiner

Art Unit 3653